

Amendments to the Claims

Please amend the claims as follows:

1. (Currently Amended) A fluid-working machine with a commutator valve and variable volume working chambers, each of which is connected by a flow path to a said commutator valve which alternately connects the working chamber alternately to a high pressure manifold and a low pressure manifold, wherein a valve member is in the flow path between each chamber and the commutator valve wherein the valve is operable to selectively isolate the working chamber from the respective commutator valve.
2. (Original) A fluid-working machine as claimed in claim 1, wherein the valve member is electronically controlled.
3. (Previously Presented) A fluid-working machine as claimed in claim 2, wherein a controller for controlling the valve member receives an input signal of a phase angle of a shaft of the machine or at least one electronic pulse per revolution which informs the controller that the shaft is passing a known phase angle.
4. (Previously Presented) A fluid-working machine as claimed in claim 3, wherein the controller is arranged to choose whether to actuate the valve member, each time the working chamber volume is at its minimum, such that the valve is closed at time close to the time the working chamber begins its expansion stroke, if it is desired to isolate the working chamber from the commutator valve.

5. (Previously Presented) A fluid-working machine as claimed in claim 4, wherein the controller sums a previous flow demand to create a total displacement demand and compares it with an actual displacement error and the controller chooses either to isolate the working chamber or to leave it active in order to minimize ongoing accumulated displacement error.

6. (Previously Presented) A fluid-working machine as claimed in claim 4, wherein the controller reads a demand from an external signal line and decides whether to isolate one of the working chambers, as they reach the minimum volume condition, in order to regulate one of speed, torque, volumetric flow rate, power and volume displaced per revolution.

7. (Previously Presented) A fluid-working machine as claimed in claim 4, wherein the controller makes decisions to isolate working chambers on the basis of sensed shaft speed so that the ratio of working chambers to idle chambers decreases, according to a pre-determined function, as the machine speeds up, in order to either maintain a constant level of throughput flow or one which rises less quickly than the shaft speed increase would indicate.

8. (Previously Presented) A fluid-working machine as claimed in claim 4, wherein the machine is arranged to work as a motor, and the controller can choose to close the

valve member some fraction of the way into an expansion stroke of the chamber, such that the chamber is connected to the commutator valve for only a fraction of the expansion stroke such that the volume of fluid working to drive the load in that expansion stroke is a fraction of the full geometric displacement of the chamber.

9. (Previously Presented) A fluid-working machine as claimed in claim 4, wherein the machine is arranged to work as a pump, and the controller can choose to close the valve member some fraction of the way into the expansion stroke of the chamber, such that the chamber is connected to the commutator valve for only a fraction of a full working stroke, such that part of an expansion stroke consists of pulling a partial vacuum in the chamber, such that when a next contraction stroke begins, the chamber does not act as a pump immediately but at some fraction of the way into the contraction stroke, such that the contraction stroke displaces only a fraction of the full geometric displacement of the chamber into the commutator valve.

10. (Original) A fluid-working machine as claimed in claim 4, wherein the controller is operable to reduce the loss of energy on the compressed fluid by closing the valve member just before the chamber reaches its maximum volume condition so that the remaining expansion can de-pressurise the fluid contained within the chamber before the commutating valve port is opened to the low-pressure manifold.

11. (Currently Amended) A fluid-working machine, comprising:

a plurality of variable volume working chambers;
a first fluid manifold;
a second fluid manifold;
a fluid controller connected with the working chambers, wherein in
a first position the fluid controller provides a fluid path
between successive ones of the working chambers and the
first manifold and blocks the fluid path between successive
ones of the working chambers and the second manifold, and
in a second position the fluid controller provides a fluid path
between successive ones of the working chambers and the
second manifold and blocks the fluid path between
successive ones of the working chambers and the first
manifold;
~~a valve disposed between the fluid controller and the one of the~~
~~working chambers~~ a plurality of valves, each of said valves
being disposed between the fluid controller and one of the
working chambers, wherein the each valve is operable to
impede fluid flow between the working chamber and the fluid
controller.

12. (Previously Presented) The fluid working machine of claim 11
comprising a controller operable to selectively control operation of the

valve between an open position in which the valve does not substantially impede fluid flow between the working chamber and the fluid controller and a closed position in which the valve impedes fluid flow between the working chamber and the fluid controller.

13. (Previously Presented) The fluid working machine of claim 12 comprising a sensor operable to detect an operational characteristic of the fluid working machine, wherein the controller selectively controls the operation of the valve in response to the detected operational characteristic.

14. (Previously Presented) The fluid working machine of claim 11 comprising a plurality of valves so that a valve is disposed between each working chamber and the fluid controller, wherein each valve is operable to impede fluid between the working chamber and the fluid controller.

15. (Previously Presented) The fluid working machine of claim 11 comprising a controller operable to control the plurality of valves to selectively control which of the valves are open, thereby facilitating fluid flow between the respective working chamber and the manifold, and which valves are closed, thereby impeding fluid flow between the respective working chamber and the manifold.

16. (Previously Presented) The fluid working machine of claim 12 comprising a sensor operable to detect and operation characteristic of the fluid working machine and the controller selectively operates each of the plurality of valves in response to the detected operational characteristic.

17. (Previously Presented) The fluid working machine of claim 16 comprising a shaft, wherein the operational characteristic relates to the position of the shaft.

18. (Previously Presented) The fluid working machine of claims 17 wherein the operational characteristic relates to a phase angle of the shaft.

19. (Previously Presented) The fluid working machine of claim 11 wherein each working chamber is operable between a minimum chamber volume and a maximum chamber volume and wherein the controller is operable to selectively operate the valve so when the valve is actuated from an open position to a closed position the valve is closed when the working chamber is approximately at the minimum volume.

20. (Previously Presented) The fluid working machine of claim 11

wherein the first manifold is a high pressure manifold and the second manifold is a low pressure manifold and the fluid controller comprises a commutator valve comprising a rotatable port plate.